

THE VALUE OF REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

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The marked changes that have been made during the past two decades in the treatment of tuberculosis is in no way better illustrated than in the shifting of position in the attitude of the members of the medical profession regarding the value of rest in this disease. We can all remember the period when, with the knowledge of the advantages of outdoor living, came the advice to tuberculous patients to exercise. The favorite prescription was: "Go out in the hills, among the pine trees, walk ten or twelve miles a day, and rough it"; and this to patients who frequently were suffering from a high fever. But gradually the profession, or rather those who saw many of these patients, discovered that, while nature aided many to recover in spite of this "roughing," more were made worse. Even more gradually it dawned upon them that what the majority of these patients needed was the reverse of "roughing it"—rest, frequently absolute rest. To-day, were you to ask the men who are treating tuberculosis exclusively what they considered the most important aid in the cure of that disease, I think a majority would answer, not fresh air, nor climate, nor forced feeding, nor tuberculin, but rest.

For many years there seemed to be an impression, which to-day is dying hard, that the fever of the tuberculous patient was entirely different from the fever of typhoid, or other febrile diseases, in that it was not necessary for a patient with fever due to the absorption of the toxins elaborated by the tubercle bacillus to go to bed, while the fever due to the absorption of the toxins of the *b. typhosus* should be treated by absolute rest of body and mind. Thus we observed the anomaly of a physician keeping his typhoid patient in bed until ten days after the evening temperature had become normal, while advising his tuberculous patient, with a temperature of 102° to 103°, to go out and rough it; or at the best to be quiet in the afternoon when the temperature was highest, an error of which the most of us have been, in times past, guilty.

This also was the time when the patient with a tuberculous joint was given rational treatment with rest, by means of an immobile splint, while the patient with an acute pulmonary tuberculosis was ordered the opposite of rest,—pulmonary gymnastics, either by means of certain breathing exercises, or by the increased respiratory efforts resulting from mountain climbing.

To better appreciate the value of rest as a therapeutic measure, it would be well to consider briefly the main predisposing factor in the causation of tuberculosis, and the resulting conditions following the neglect of this most important aid to treatment. In the first place you have doubtless noticed that it is not the indolent individual, who shirks the responsibilities of life; it is not those who are stigmatized by the inelegant, though expressive, term of "dead ones" who fall a prey to the tubercle bacillus. The ranks of the tuberculous are recruited from the great army of overworked; from the men who allow their ambitions or their necessities to drive them to overexertion, with an insufficient time for needed rest; from the women worn out by childbearing and household cares; from the young men and women who spend the time after working hours in dissipation or pleasure. Too much work, too much play, or a combination of both, exhaust the body cells and reduce the resisting forces of the organism to a point which allows them to succumb to the attacks of the tubercle bacillus. In short, this is a disease caused by the tubercle bacillus in a body too worn out by lack of sufficient rest to allow recuperation of the exhausted cells. Heretofore, too much stress has been laid upon lack of fresh air, in the home, the workroom, and office, in the causation of tuberculosis. It has been shown that laborers engaged in outdoor work succumb more quickly to this disease when overworked than when engaged in lighter work indoors.

Next, let us consider the subject from the other standpoint; viz., the deleterious effects of exercise on the individual suffering from the effects of an active tuberculosis. In the first place, the tubercle bacillus can be present in the human body without causing its host, per se, the slightest injury. It is not the tubercle bacillus, but the poisons elaborated by it, which cause the syndrome known as tuberculosis. It is the absorption, and dissemination throughout the human organism, of these poisons which causes the wasting, the fever, the rapid pulse, the malaise, the anorexia, and the various other symptoms which are the visible manifestations of the invisible existence of this germ.

Before speaking of the evil effects of exercise, by causing an increase of all these symptoms, while rest produces a favorable effect in the opposite direction, I wish to state clearly that I believe heartily in the beneficial effects of exercise, under the guidance of a physician, in arrested cases with subsidence of the acute symptoms which indicate a progressive disease. I am speaking now of the cases which come to us every day, where the disease is not arrested and acute symptoms are present. Let us consider the effect of exercise on these symptoms.

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There is wasting. The causes of this are several, all due directly or indirectly to toxin absorption. First, there is loss of flesh due to the destruction of body cells by the direct action of the toxins on these cells. Secondly, there is waste of tissue due to the increased metabolism as a result of the increased temperature. Third, there is loss of weight because of lessened ingestion of food due to lack of appetite. Fourth, there is imperfect assimilation of food because of the impairment of the digestive tract. And lastly, there is loss of weight from muscular movement incident to exercise. The loss of weight from the first four causes can be influenced only indirectly by rest, by the lessened absorption of toxins due to the quieting of the circulatory activity. The last named factor, the loss from muscular movement, can be controlled directly. For all practical purposes it may be accepted that the loss from this source will be in proportion to the amount of muscle movement: therefore, the amount of saving of tissue will be the greatest where the control of the patient's movements approaches most nearly a condition of absolute rest.

The pyrexia of tuberculosis is due to two factors. First, there is the effect upon the centers, which govern heat control, by the toxins. Second, there is the influence upon these centers by the presence in the body of the products of increased destruction of tissue. This is aided by imperfect action of the excretory organs. Rest favorably influences the temperature by lessening the amount of toxin absorption and of tissue destruction.

The increased pulse so characteristic of this disease is due to a combination of toxemia, increased temperature, and the muscular weakness which is general with the entire musculature of the body. It must be obvious to everyone the necessity of rest for an organ of such prime importance as the heart.

It would seem unnecessary at this time, when the subject of tuberculosis is so thoroughly discussed, to make the statement that tuberculous patients with a temperature of 100° and over should be put to bed and required to stay in bed until the afternoon temperature falls below 99° , but daily experience in meeting patients with a temperature of 102° to 103° and higher, who have never been told to go to bed, shows that the necessity for such a procedure is not so generally appreciated as it should be. My practice, which is the one pretty universally followed at sanatoria, is to require each patient to take his temperature, or to have it taken by an attendant, at least every three hours and when the thermometer registers 99.6° to remove all clothing and go to bed for the remainder of the day. If the temperature reaches 100° , the patient must stay in bed the succeeding day, even if the temperature does not exceed normal on the second day. If the temperature is 99° when taken at 7 a. m., the patient stays in bed all day. Any increase of symptoms, even without a rise of temperature, is a signal to rest—in a chair, if the increase is slight, in bed, if greater. To anyone who has not followed this

plan, the rapid amelioration of symptoms, as shown by the lessened cough, increased appetite, disappearance of night sweats, drop in temperature, and change in facial expression, is little short of marvelous. The good results are so apparent that patients are not required to be sent to bed when an exacerbation occurs, but go voluntarily—knowing from experience the benefits derived.

To follow the plan here outlined requires in some cases the utmost faith in its value by the physician, and as great faith in the physician by the patient. On two occasions I have kept patients in bed for more than five months, not allowing them up for meals, and at times not allowing them the opportunity of writing letters, and at other times even restricting the amount of reading to a certain definite length of time for each twenty-four hours; with the pleasure at the end of that time of seeing their temperatures drop to normal with a corresponding improvement in all the other symptoms. These, of course, are extreme cases, and where two months in bed does not bring about improvement, the chances are that none will be made. Where the result is to be satisfactory it will usually be shown by a fall in temperature in the first month. And among all other signs of improvement the permanent lowering of temperature is, I think, the most important.

For patients constantly running a high temperature not only must there be as nearly absolute physical rest as possible but also mental rest. Frequently all reading must be prohibited, letter writing forbidden, and all unnecessary conversation or visits disallowed.

When the patient's temperature admits his being up, his rest may be taken in a reclining chair, with the proviso that he lie down, before and after each meal, for from one-half an hour to an hour, if he is allowed light exercise. He is also instructed to take his temperature regularly and to go to bed at once should a rise of temperature, or other increase of symptoms, occur.

It is hardly necessary to insist upon the most complete rest in case of blood spitting or hemorrhage. It is merely mentioned with the statement that no other measure is so effective as rest, in case of the occurrence of these complications.

Finally, when the patient is discharged, he should be given the most thorough instructions as to rest. A great proportion of the apparently cured cases that relapse is due to the ignorance, or underestimation, of the great importance of following out these principles at home after leaving an institution. Patients who can work only half the time should be taught to rest the other half. They should know that for many months and even years they can not work and play too—that the hours not spent in working should be given up to rest instead of parties, dancing, and games. This may be considered a misfortune but it is not so great a misfortune as to relapse from the ranks of the breadwinners to the ranks of the dependents. And, after all the chief end in view, and the best test of the successful treatment of tuberculosis, is the production of breadwinners from the tuberculous who come into our hands dependents.